



This report is published weekly on the [PHE website](#). For further information on the surveillance schemes mentioned in this report, please see the [PHE website](#) and the [related links](#) at the end of this document.

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Summary

At the start of the 2015/16 influenza season, activity is at low levels in week 45 (ending 8 November 2015)

- [Community influenza surveillance](#)
 - In week 45, a number of respiratory indicators have shown increases in children aged <1 year, these increases are in line with reports of increasing respiratory syncytial virus (RSV) activity.
 - Six new acute respiratory outbreaks have been reported in the past seven days, five in care homes (one tested positive for rhinovirus and other results were not available) and one in a traveller community (tested positive for Bordetella pertussis).
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 45, overall weekly influenza-like illness GP consultations were low in England, Wales, Scotland and Northern Ireland, through the GP In Hours Surveillance system.
- [Influenza-confirmed hospitalisations](#)
 - One new admission to ICU/HDU with confirmed influenza was reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (114 Trusts in England) in week 45, a rate of 0.00 compared to 0.00 per 100,000 the previous week.
 - One new hospitalised confirmed influenza case (one influenza A(H1N1pdm09)) were reported through the USISS sentinel hospital network across England (17 Trusts), a rate of 0.01 compared to 0.06 per 100,000 the previous week.
 - No confirmed influenza ECMO admissions were reported in week 45.
- [All-cause mortality data](#)
 - In week 45 2015, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England overall and by age group and across the devolved administrations.
- [Microbiological surveillance](#)
 - Two samples tested positive for influenza through the English GP sentinel schemes.
 - Twelve influenza positive detections were recorded through the DataMart scheme (five influenza A(H1N1)pdm09, three influenza A(H3), four influenza B). A positivity of 1.4% was seen, with the highest positivity in 15-44 year olds (3.7%).
- [Vaccination](#)
 - Up to week 45 2015 in 49.9% GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows: 34.0% in under 65 years in a clinical risk group, 32.8% in pregnant women, 59.1% in 65+ year olds, 18.3% in all 2 year olds, 19.5% in all 3 year olds and 16.0% in all 4 year olds.
- [International situation](#)
 - Globally, influenza activity generally decreased or remained low, with only a few countries reporting elevated respiratory illness levels. Influenza activity in the northern hemisphere continued at low, inter-seasonal levels with sporadic detections.

In week 45, a number of respiratory indicators have shown increases in children aged <1 year, these increases are in line with reports of increasing respiratory syncytial virus (RSV) activity.

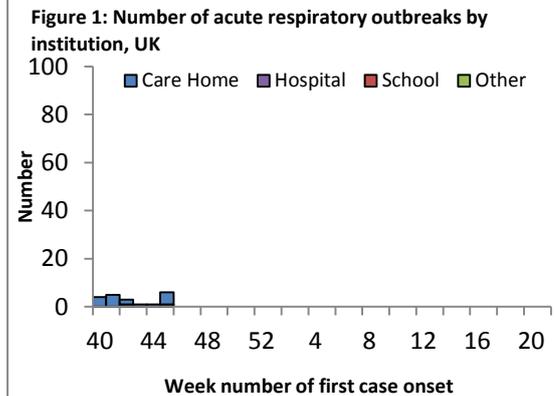
- PHE Real-time Syndromic Surveillance

-During week 45, there were increases in a number of respiratory indicators in children aged <1 year across all syndromic surveillance systems. These increases are in line with recent reports of increasing respiratory syncytial virus (RSV) activity.

- Acute respiratory disease outbreaks

- Six new acute respiratory outbreaks have been reported in the past 7 days. Five of them were in care homes with one tested positive for rhinovirus while the other results not available. One was in a traveller community with Bordetella pertussis detected.

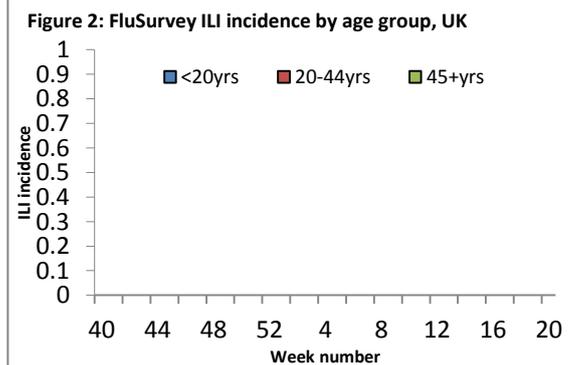
-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respscids@phe.gov.uk.



- FluSurvey

-Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey project (<http://flusurvey.org.uk>) run by the London School of Hygiene and Tropical Medicine and PHE.

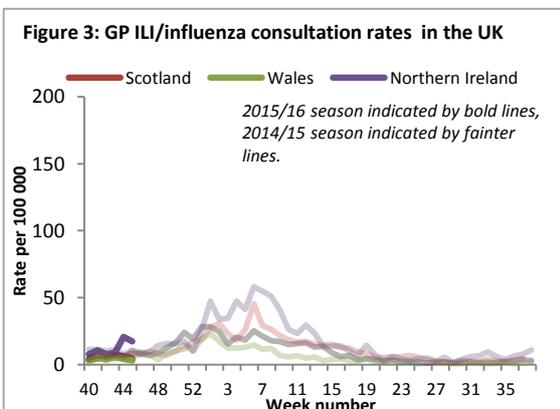
-Data is expected later in the season.



Weekly consultation rates in national sentinel schemes

In week 45 overall weekly influenza-like illness GP consultations were low in England, Wales and Scotland, and moderate in Northern Ireland.

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

-The Northern Ireland influenza consultation rate was low at 17.5 per 100,000 in week 45 (Figure 3) and below the pre-epidemic threshold (49 per 100,000).

-The highest rates were seen in 75+ year olds (56.6 per 100,000), <1 year olds (50.2 per 100,000) and 1-4 year olds (29.2 per 100,000).

Wales

- The Welsh influenza rate was low at 3.2 per 100,000 in week 45 (Figure 3).
- The highest rates were seen in 65-74 year olds (8.3 per 100,000) and 15-44 year olds (4.4 per 100,000).

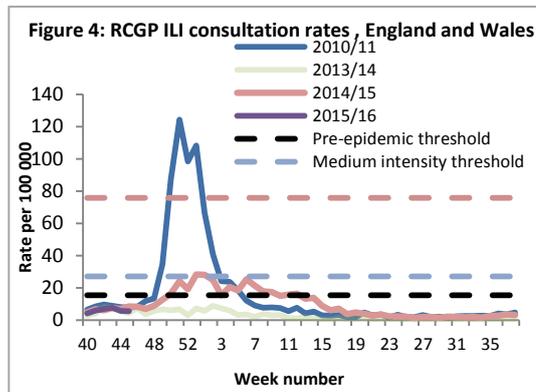
Scotland

- The Scottish ILI rate was low at 4.7 per 100,000 in week 45 (Figure 3) and below the pre-epidemic threshold (37 per 100,000).
- The highest rates were seen in 15-44 year olds (6.6 per 100,000), 45-65 year olds (4.5 per 100,000) and 65-74 year olds (4.4 per 100,000).

RCGP (England and Wales)

-The weekly ILI consultation rate through the RCGP surveillance system was low at 5.5 in week 45 and below the pre-epidemic threshold (15.4 per 100,000) (Figure 4*). By age group, the highest rate was seen in 15-44 year olds (7.9 per 100,000).

**The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe. The threshold to indicate a likelihood of influenza community circulation for as calculated through the Moving Epidemic Method is 15.4 per 100,000.*



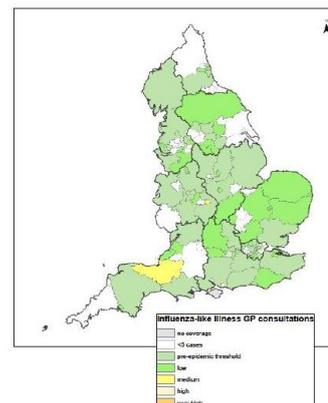
GP In Hours Syndromic Surveillance System (England)

-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system was low at 5.4 per 100,000 in week 45 (Figure 5).

Figure 5 represents a map of GP ILI consultation rates in Week 45 across England by Local Authorities, using influenza-like illness surveillance thresholds.

Thresholds are calculated using a standard methodology for setting ILI thresholds across Europe (the "Moving Epidemic Method" (MEM)) and are based on six previous influenza seasons (excluding the 2009/10 H1N1 pandemic)

-For further information, please see the syndromic surveillance [webpage](#).



Influenza confirmed hospitalisations

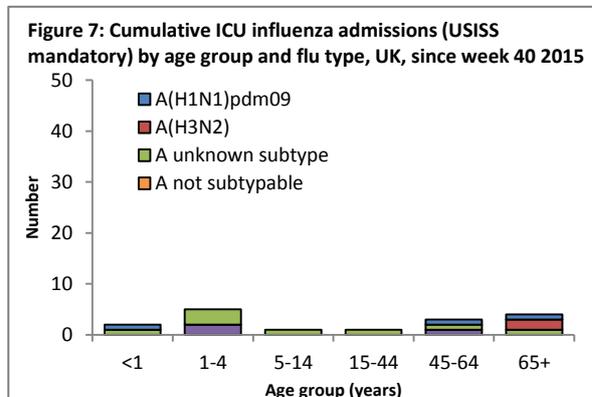
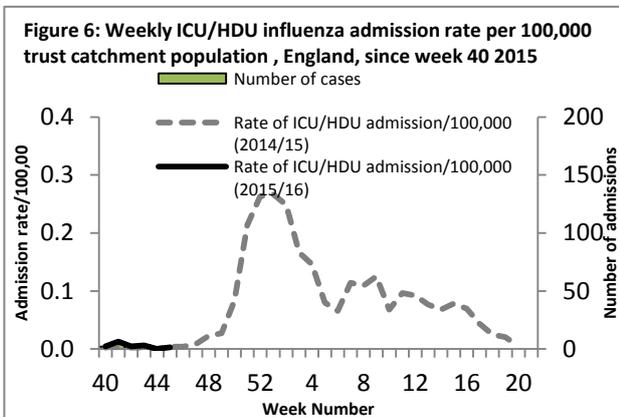
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In week 45, one new admission to ICU/HDU with confirmed influenza was reported through the national USISS mandatory ICU scheme across the UK (114 Trusts in England). One new hospitalised confirmed influenza cases (one influenza A(H1N1pdm09)) were reported through the USISS sentinel hospital network across England (17 Trusts).

A national mandatory collection (USISS mandatory ICU scheme) is operating in cooperation with the Department of Health to report the number of confirmed influenza cases admitted to Intensive Care Units (ICU) and High Dependency Units (HDU) and number of confirmed influenza deaths in ICU/HDU across the UK. A confirmed case is defined as an individual with a laboratory confirmed influenza infection admitted to ICU/HDU. In addition a sentinel network (USISS sentinel hospital network) of acute NHS trusts is established in England to report weekly laboratory confirmed hospital admissions. Further information on these systems is available through the [website](#). Please note data in previously reported weeks are updated and so may vary by week of reporting.

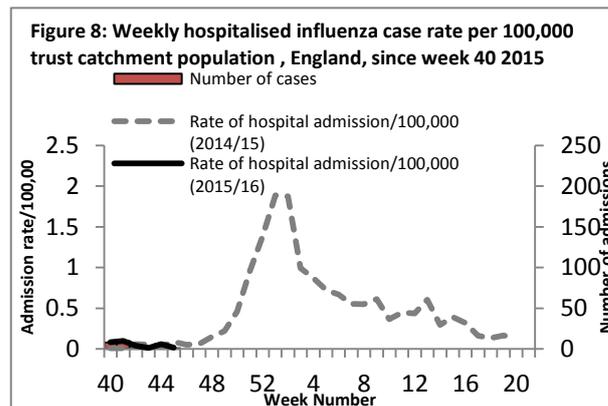
- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 45)

-In week 45, one new admissions to ICU/HDU with confirmed influenza were reported across the UK (114/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 6 and 7), a rate of 0.00 per 100,000 compared to 0.00 per 100,000 the previous week. No new confirmed influenza deaths were reported in week 45 2015. A total of 16 admissions (three influenza A(H1N1)pdm09, two influenza A(H3N2), eight influenza A unknown subtype and three influenza B) and no confirmed influenza deaths have been reported since week 40 2015.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 45)

-In week 45, one new hospitalised confirmed influenza case (one influenza A(H1N1pdm09)) was reported through the USISS sentinel hospital network from 17 NHS Trusts across England (Figure 8), a rate of 0.01 per 100,000 compared to 0.06 per 100,000 the previous week. A total of 30 hospitalised confirmed influenza admissions (16 A(H1N1pdm09), five A(H3N2), five A unknown subtype and four B) have been reported since week 40.



- USISS Severe Respiratory Failure Centre confirmed influenza admissions, England (week 45)

-In week 45, no new confirmed influenza admissions to the five Severe Respiratory Failure Centres in England were reported.

All-cause mortality data

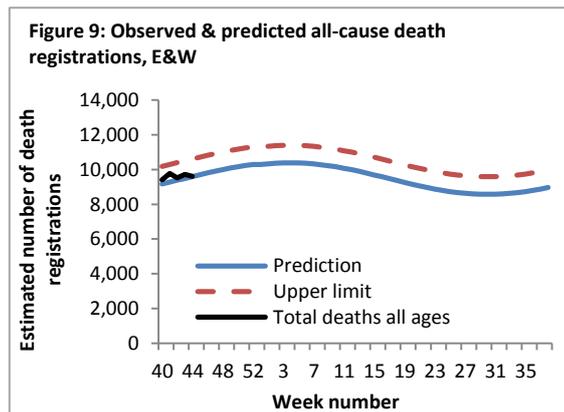
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In week 45 2015, no statistically significant excess all-cause mortality by week of death was seen through the EuroMoMo algorithm in England overall and by age group and across the devolved administrations.

Seasonal mortality is seen each year in the UK, with a higher number of deaths in winter months compared to the summer. Additionally, peaks of mortality above this expected higher level typically occur in winter, most commonly the result of factors such as cold snaps and increased circulation of respiratory viruses, in particular influenza. Weekly mortality surveillance presented here aims to detect and report acute significant weekly excess mortality above normal seasonal levels in a timely fashion. Excess mortality is defined as a significant number of deaths reported over that expected for a given point in the year, allowing for weekly variation in the number of deaths. The aim is not to assess general mortality trends or precisely estimate the excess attributable to different factors, although some end-of-winter estimates and more in-depth analyses (by age, geography etc.) are undertaken.

- Excess overall all-cause mortality, England and Wales

-In week 44 2015, an estimated 9,618 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is a decrease compared to the 9,711 estimated death registrations in week 43, and is below the 95% upper limit of expected death registrations for the time of year as calculated by PHE (Figure 1).



- Excess all-cause mortality by age group, England, Wales, Scotland and Northern Ireland

-In week 45 2015, no excess mortality by date of death above the upper 2 z-score threshold was seen in England after correcting ONS disaggregate data for reporting delay with the standardised EuroMoMo algorithm (Figure 2, Table 1), in any age group or subnationally. This data is provisional due to the time delay in registration; numbers may vary from week to week.

-No excess mortality above the threshold through the same standardised algorithm was seen across the Devolved Administrations in week 45 (Table 2).

Table 1: Excess mortality by age group, England*

Age group (years)	Excess detected in week 45 2015?	Weeks with excess in 2015/16
<5	×	NA
5-14	×	NA
15-64	×	NA
65+	×	NA

* Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold

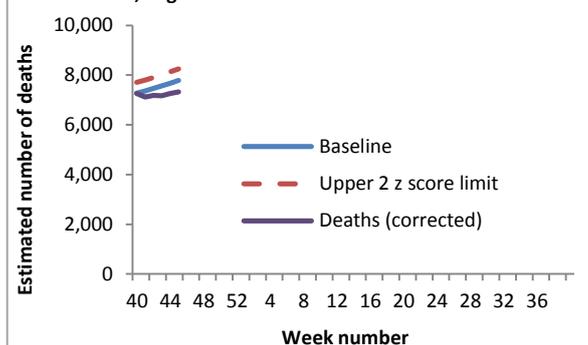
Table 2: Excess mortality by UK country*

Country	Excess detected in week 45 2015?	Weeks with excess in 2015/16
England	×	NA
Wales	×	NA
Scotland	×	NA
Northern Ireland	×	NA

* Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold

NB. Separate total and age-specific models are run for England which may lead to discrepancies between Tables 1 + 2

Figure 10: Excess mortality in 65+ year olds by week of death, EuroMOMO, England



Microbiological surveillance

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In week 45 2015, two samples tested for influenza through the English GP sentinel schemes were positive. Twelve influenza positive detections were recorded through the DataMart scheme (five influenza A(H1N1)pdm09, three influenza A(H3) and four influenza B).

- Sentinel swabbing schemes in England (RCGP) and the Devolved Administrations

-In week 45, two samples were positive in Scotland and none in England, Wales or Northern Ireland (Table 3).

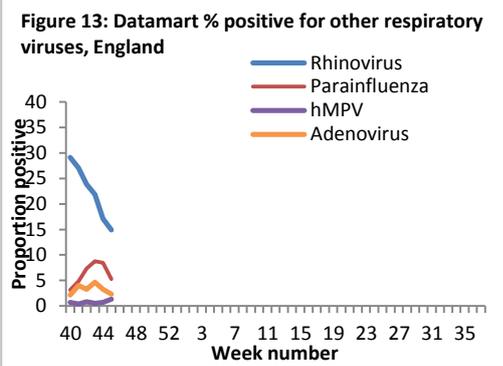
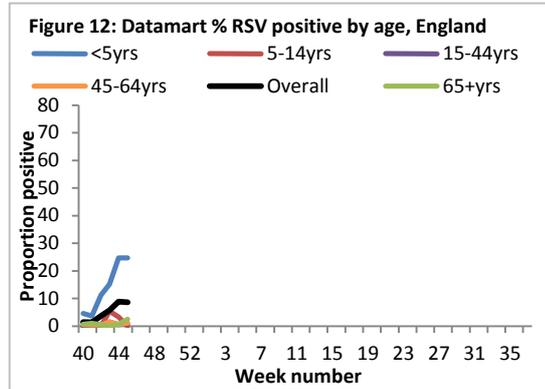
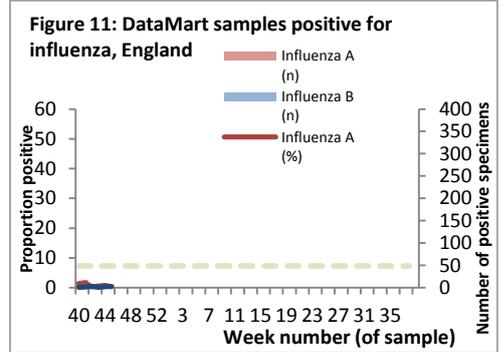
Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
40	1/7 (-)	1/43 (2.3%)	0/1 (-)	0/0 (-)
41	0/8 (-)	2/68 (2.9%)	0/2 (-)	0/0 (-)
42	0/26 (0%)	1/74 (1.4%)	0/0 (-)	0/0 (-)
43	1/49 (2.0%)	0/60 (0%)	1/1 (-)	0/0 (-)
44	0/41 (0%)	3/68 (4.4%)	1/5 (-)	0/0 (-)
45	0/20 (0%)	2/59 (3.4%)	0/0 (-)	0/0 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 45 2015, out of the 891 respiratory specimens reported through the Respiratory DataMart System, 12 samples (1.3%) were positive for influenza (5 A(H1N1)pdm, 3 influenza A(H3), and 4 B, Figure 9*). The highest positivity was in the 15-44 years, 3.7%. The overall positivity for RSV remained at an increased level similar to last week at 8.7% in week 45, which was mainly observed in children under 5 years (24.7%) (Figure 10). Positivity for parainfluenza decreased to 5.3% in week 45. Positivity for rhinovirus decreased to 14.5%. Adenovirus and hMPV remained low at 2.3% and 1.3%, respectively (Figure 11).



*The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe. The threshold to indicate a likelihood of influenza community circulation for Datamart % positive as calculated through the Moving Epidemic Method is 7.4% in 2015/16.

- Virus characterisation

The PHE Respiratory Virus Unit has isolated and antigenically characterised two A(H3N2) influenza viruses from week 38, prior to the start of the 2015/16 winter influenza season in week 40 2015. The two viruses were antigenically similar to the A/Switzerland/9715293/2013 H3N2 Northern Hemisphere 2015/16 vaccine strain. Genetic characterisation of six A(H3N2) influenza viruses since week 38 showed that they belong to genetic group 3C.2a, and are genetically similar to the majority of A(H3N2) viruses circulating in the 2014/15 season.

Eighteen A(H1N1)pdm09 influenza viruses have been isolated and antigenically characterised since the start of the 2015/16 winter influenza season in week 40 2015. These 18 viruses were antigenically similar to the A/California/7/2009 Northern Hemisphere 2015/16 (H1N1)pdm09 vaccine strain.

One influenza B virus has been isolated and antigenically characterised since week 40 2015. This virus was characterised as belonging to the B/Victoria/2/87 lineage and was antigenically similar to B/Brisbane/60/2008, the influenza B/Victoria-lineage component of 2015/16 Northern Hemisphere quadrivalent vaccines.

- Antiviral susceptibility

Since week 40 2015, 13 and 6 influenza viruses (A(H1N1)pdm09) have been tested for oseltamivir and zanamivir susceptibility, respectively, in the UK, and all were found to be sensitive.

- Antimicrobial susceptibility

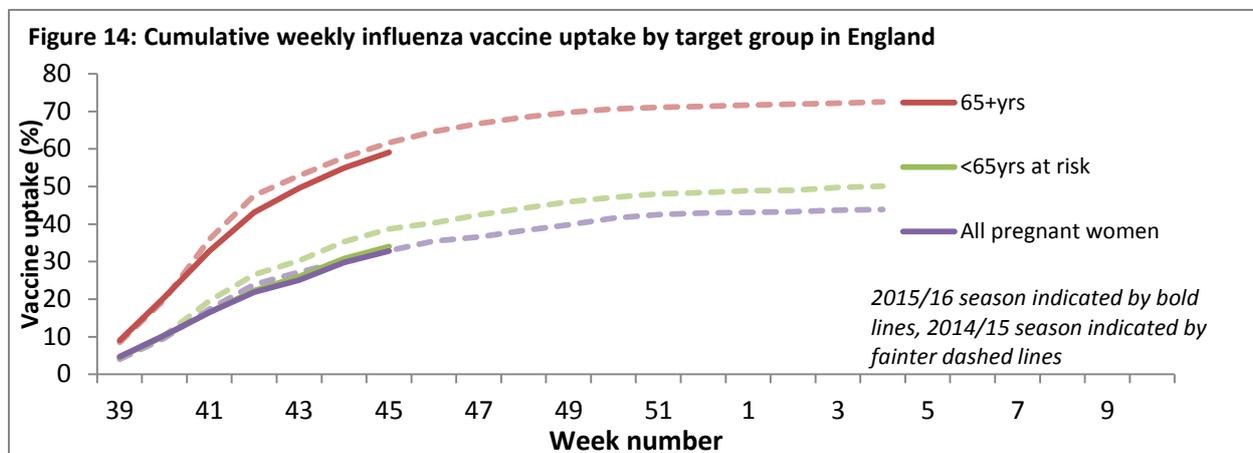
-Table 4 shows in the 12 weeks up to 8 November 2015, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (CAP) and the choice of antibiotics reflects the British Thoracic Society empirical guidelines for management of CAP in adults.

Table 4: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 12 weeks up to 8 November 2015, E&W

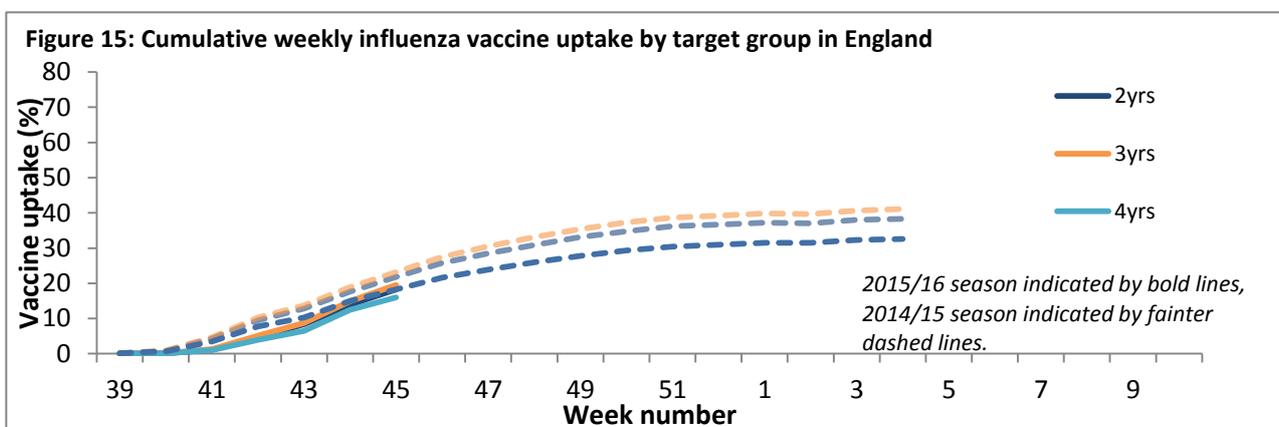
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	1,972	90
	Macrolides	2,277	80
	Tetracycline	2,187	81
<i>H. influenzae</i>	Amoxicillin/ampicillin	8,605	73
	Co-amoxiclav	8,219	92
	Macrolides	2,832	17
<i>S. aureus</i>	Tetracycline	8,403	98
	Methicillin	3,617	88
	Macrolides	3,543	71
MRSA	Clindamycin	343	48
	Tetracycline	403	89
MSSA	Clindamycin	1,959	77
	Tetracycline	2,942	93

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 45 2015 in 49.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows (Figure 14)
 - 34.0% in under 65 years in a clinical risk group
 - 32.8% in pregnant women
 - 59.1% in 65+ year olds



- In 2015/16, all two-, three- and four-year-olds continue to be eligible for flu vaccination. In addition, the programme has been extended to children of school years 1 and 2 age. Up to week 45 2015 in 49.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows (Figure 15)
 - 18.3% in all 2 year olds
 - 19.5% in all 3 year olds
 - 16.0% in all 4 year olds



Globally, influenza activity generally decreased or remained low, with only a few countries reporting elevated respiratory illness levels. Influenza activity in the northern hemisphere continued at low, inter-seasonal levels with sporadic detections.

- [Europe](#) updated on 06 November 2015 (Joint ECDC-WHO Influenza weekly update)

For week 44, influenza activity was at low levels in the 40 countries which reported.

For week 44/2015, eight out of 491 (1.6%) specimens from sentinel sources in 30 countries tested positive for influenza virus and 46 of 5474 (0.8%) specimens from non-sentinel sources in thirteen of the 26 countries that tested.

- [United States of America](#) Updated on 6 November 2015 (Centre for Disease Control report)

During week 43, influenza activity was low in the United States, with the most frequently identified type reported to be influenza A with influenza A(H3) viruses predominating.

Nationwide during week 43, 1.4% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI) in week 42. This percentage is below the national baseline of 2.1%.

During week 43, 5.5% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.1% for week 43. No influenza-associated paediatric deaths have been reported for the 2015-2016 season.

- [Canada](#) Updated on 06 November 2015 (Public Health Agency report)

Overall, there is low influenza activity in Canada. In week 42, influenza activity and detections decreased from the previous week. So far this season, influenza A(H3N2) has been the most common subtype affecting Canadians.

The number of positive influenza detections increased from 0.88% in week 42 to 1.0% in week 43. To date, 90% of influenza detections have been influenza A and the majority of those subtyped have been A(H3) (88%).

The national influenza-like-illness (ILI) consultation rate decreased from 31.4 per 1,000 visits in week 42 to 17.5 per 1,000 visits in week 43. In week 43, the highest ILI consultation rate was found in the 20-64 age group and the lowest was found in the ≥ 65 years of age group.

In week 43, one new laboratory-confirmed outbreak of influenza was reported in a long term care facility.

- [Global influenza update](#) Updated on 02 November 2015 (WHO website)

Globally, influenza activity generally decreased or remained low in both hemispheres, with only a few countries reporting elevated respiratory illness levels.

In the Northern Hemisphere, influenza activity continued at low, inter-seasonal levels with sporadic detections

Few influenza virus detections were reported by countries in Africa.

In tropical countries of the Americas, Central America and the Caribbean, influenza activity remained at low levels, with the exception of Cuba, where high numbers of severe acute respiratory infections (SARI), associated with influenza A(H1N1)pdm09 virus and RSV, continued to be reported. In Colombia, acute respiratory activity (ARI) remained slightly elevated with ongoing RSV and influenza A(H3N2) detections.

In western Asia, Bahrain and Qatar reported increased influenza activity, predominantly due to influenza A (H1N1)pdm09.

In tropical Asia, countries in Southern and South East Asia reported low influenza activity overall except India, Lao People's Democratic Republic and Thailand where activity mainly due to A(H1N1)pdm09 virus in India and A(H3N2) virus in Lao PDR and Thailand continued to be reported. Influenza activity declined in southern China. Iran reported increased influenza detections, mostly due to influenza A(H3N2).

In temperate South America, respiratory virus activity continued to decrease in recent weeks. In Chile, ILI activity remained above expected levels in recent weeks though influenza A and RSV detections have decreased.

In South Africa, the influenza season ended by mid-September with sporadic detections of mostly influenza B viruses in recent weeks.

In Australia, influenza activity continued to decrease. Recent influenza virus detections were in almost equal proportions of influenza A and B viruses.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 52,564 specimens between 05 October and 18 October 2015. 1,431 were positive for influenza viruses, of which 1,140 (79.7%) were typed as influenza A and 291 (20.3%) as influenza B. Of the sub-typed influenza A viruses, 375 (46.2%) were influenza A(H1N1)pdm09 and 437 (53.8%) were influenza A(H3N2). Of the characterized B viruses, 61 (72.6%) belonged to the B-Yamagata lineage and 23 (27.4%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 19 October 2015 (WHO website)

Influenza A(H7N9) latest update on 19 October 2015

On [14 October 2015](#) the National Health and Family Planning Commission (NHFPC) of China notified WHO of 2 additional laboratory-confirmed cases of human infection with avian influenza A (H7N9) virus.

For further updates and WHO travel and clinical management advice, please see the [WHO website](#).

Influenza A(H5N1)

From 2003 through 15 October 2015, 844 laboratory-confirmed human cases of H5N1 avian influenza have been officially reported to [WHO](#) from 16 countries, of which 449 (53.2%) have died. Since the last WHO Influenza update on 4 September 2015, no new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection were reported to WHO. Various influenza A(H5) subtypes, such as influenza A(H5N1), A(H5N2), A(H5N3), A(H5N6) and A(H5N8), continue to be detected in birds in West Africa, and Asia, according to recent reports received by OIE. Although these influenza A(H5) viruses might have the potential to cause disease in humans, so far no human cases of infection have been reported, with exception of the human infections with influenza A(H5N1) viruses and the four human infections with influenza A(H5N6) virus detected in China since 2014. Overall, the public health risk assessment for avian influenza A(H5) viruses remains unchanged since the assessment of [17 July 2015](#).

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 29 October 2015

Between [17 and 24 October 2015](#), the National IHR Focal Point for the Kingdom of Saudi Arabia notified WHO of 12 additional cases of MERS-CoV infection, including one death.

On [12 October 2015](#), the National IHR Focal Point for the Republic of Korea provided follow-up information on a previously reported case of Middle East respiratory syndrome coronavirus (MERS-CoV) infection. The patient, who was diagnosed from hospital on 3 October following two consecutive negative PCR tests for MERS-CoV, was readmitted to hospital with fever on 11 October and tested positive again for MERS-CoV on 12 October. A total of 186 MERS-CoV cases, including 36 deaths, have been associated with the outbreak in the Republic of Korea.

Up to 9 November 2015, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in England. On-going surveillance has identified 477 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, WHO has been notified of 1,611 laboratory-confirmed cases of infection with MERS-CoV, including at least 575 related deaths. Further information on management and guidance of possible cases is available [online](#). The latest ECDC MERS-CoV risk assessment can be found [here](#), where it is highlighted that risk of widespread transmission of MERS-CoV remains low.

Acknowledgements

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This report was prepared by the Influenza section, Respiratory Diseases Department, Centre for Infectious Disease Surveillance and Control, Public Health England. We are grateful to all who provided data for this report including the RCGP Research and Surveillance Centre, the PHE Real-time Syndromic Surveillance team, the PHE Respiratory Virus Unit, the PHE Modelling and Statistics unit, the PHE Dept. of Healthcare Associated Infection & Antimicrobial Resistance, PHE regional microbiology laboratories, NHS Direct, Office for National Statistics, the Department of Health, Health Protection Scotland, National Public Health Service (Wales), the Public Health Agency Northern Ireland, the Northern Ireland Statistics and Research Agency, QSurveillance[®] and EMIS and EMIS practices contributing to the QSurveillance[®] database.

Related links

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Weekly consultation rates in national sentinel schemes

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- Scotland surveillance ([Health Protection Scotland](#))
- Wales surveillance ([Public Health Wales](#))
- [Real time syndromic surveillance](#)
- MEM threshold [methodology paper](#) and [UK pilot paper](#)

Community surveillance

- [Outbreak reporting](#)
- [FluSurvey](#)
- [MOSA](#)

Disease severity and mortality data

- [USISS](#) system
- [EuroMOMO](#) mortality project

Vaccination

- Seasonal influenza vaccine programme ([Department of Health Book](#))
- Childhood flu programme information for healthcare practitioners ([Public Health England](#))
- 2015/16 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))